Abstract

To detect a stroke reliably at the time of the start of the engine when a stroke cannot be detected based on crank pulses alone.

A stroke is detected based on a difference ΔN between the engine rotational speeds at top and bottom dead centers and a flag F_N is changed depending upon whether a temporary stroke set before a stroke has been detected and the detected stroke coincide with each other or not. Simultaneously, a stroke is detected based on a difference ΔP between the intake air pressures at two bottom dead centers and a flag F_P is changed depending upon whether a temporary stroke set before a stroke has been detected and the detected stroke coincide with each other or not. Then, when the flags F_N and F_P coincide with each other, the stroke detection is completed. When the detected stroke differs from the temporary stroke, the stroke is shifted by a phase of 360° and the crank pulses are renumbered.